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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,480	09/30/2003	Mo-Han Fong	0583P57US01	1538
26123	7590	08/10/2005	EXAMINER	
BORDEN LADNER GERVAIS LLP WORLD EXCHANGE PLAZA 100 QUEEN STREET SUITE 1100 OTTAWA, ON K1P 1J9 CANADA			HOLLIDAY, JAIME MICHELE	
			ART UNIT	PAPER NUMBER
			2686	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/673,480	Applicant(s) FONG ET AL.	
	Examiner Jaime M. Holliday	Art Unit 2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/30/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on September 30, 2003 has been considered by the Examiner and made of record in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by **Kim et al. (U.S. Patent # 6,456,850 B1)**.

Consider **claim 1**, Kim et al. clearly show and disclose a method for substantially preventing overload conditions in a communication system, reading on the claimed "method of balancing voice and data traffic in a wireless communications network," comprising the steps of:

establishing a threshold value for acceptable communications, reading on the claimed "maximum load value for at least one of a voice or data traffic on a carrier;" and

a call load analysis is performed from which an average call load, reading on the claimed "voice or data traffic," value is calculated; when the average call load is substantially equal to or above the established threshold, reading on the claimed "maximum call load," subscriber admission requests are blocked and such subscribers are not admitted to the communication system, reading on the claimed "maintaining load on said carrier at a level no greater than said established maximum load value" (column 4 lines 30-31, 41-44 and 48-51).

4. **Claims 4, 5, 9 and 10** are rejected under 35 U.S.C. 102(b) as being anticipated by **Kotzin et al. (U.S. Patent # 5,796,722)**.

Consider **claim 4**, Kotzin et al. clearly show and disclose a multi-carrier wireless communication system that employs the use of handoff as a means for balancing the call traffic, reading on the claimed "voice and data call load," based upon metrics corresponding to loading a plurality of carriers, thereby improving the capacity and call quality of the communication system, reading on the claimed "method of balancing voice and data call loads whereby relative voice and data call loading is dynamically managed to a prescribed quality of service level" (column 2 line 60- column 3 line 3).

Consider **claim 5**, and **as applied to claim 4 above**, Kotzin et al. clearly show and disclose a multi-carrier wireless communication system that employs the use of handoff as a means for balancing the call traffic, reading on the claimed “voice and data call load,” among a plurality of carriers within the communications system, reading on the claimed “voice and data loads are maintained on different call carriers” (column 2 lines 60-64).

Consider **claim 9**, and **as applied to claim 4 above**, Kotzin et al. clearly show and disclose monitoring and evaluating a metric on a first of a plurality of carriers, and, if appropriate, identifying a second carrier which has excess capacity available. Once a second carrier has been identified, the communication system will select a suitable subscriber candidate resident on the first carrier to handoff from the first carrier to the second carrier, thereby improving the metric associated with the first carrier, reading on the claimed “implementing a migration of at least a portion of said voice or data loading from a first carrier to a second carrier” (column 3 lines 7-15).

Consider **claim 10**, Kotzin et al. clearly show and disclose an a multi-carrier wireless communication system using handoff, reading on the claimed “system operable to balance voice and data traffic in a wireless communications network, and system comprising:

An apparatus, reading on the claimed “call controller,” for balancing the call traffic among a plurality of carrier, comprising a monitor which tracks one or a plurality of metrics corresponding to the quantity and/or quality of the load for

each of the plurality of carriers, reading on the claimed "call controller operable to maintain call loading on a carrier at a level not to exceed a predetermined maximum level for at least one of voice or data traffic in the carrier" (column 3 lines 17-23).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (U.S. Patent # 6,456,850 B1)** in view of **Brody et al. (U.S. Patent # 4,670,899)**.

Consider claim 2, and **as applied to claim 1 above**, Kim et al. clearly show and disclose the claimed invention except that the established threshold value, reading on the claimed "maximum load value," is a voice load value.

In the same field of endeavor, Brody et al. clearly show and disclose balancing of loading of cells in a cellular mobile radio telephone system is performed by periodically determining the channel utilization of each cell, computing a representative voice channel occupancy level, reading on the claimed "voice load value," and attempting to hand-off calls, reading on the claimed "at least one of voice or data traffic," If a (voice) channel occupancy level exceeds a predetermined threshold level a call is transferred, reading on the claimed "established maximum load value is a voice load value" (abstract and column 7 lines 18-20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to establish the predetermined threshold level, reading on the claimed "maximum load value," as that of the

voice channel occupancy level, reading on the claimed "voice load value," as taught by Brody et al., in the method of Kim et al., in order to balance call load efficiently.

9. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (U.S. Patent # 6,456,850 B1)** in view of **Zdunek et al. (U.S. Patent # 4,870,408)**.

Consider **claim 3**, and **as applied to claim 1 above**, Kim et al. clearly show and disclose the claimed invention except that the established threshold value, reading on the claimed "maximum load value," is a data load value.

In the same field of endeavor, Zdunek et al. clearly show and disclose a method to dynamically allocate a number of data channels, reading on the claimed "carriers," on a trunked radio system, reading on the claimed "wireless communications network," and to redistribute or balance data traffic load on the particular number of data channels currently available. The data activity is monitored during a predetermined interval and if the data activity is above a predetermined maximum, reading on the claimed "maximum load value is a data load value" (column 2 lines 20-25 and 32-36).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to establish the threshold value, reading on the claimed "maximum load value," as that of the data activity, reading on the claimed "data load value," as taught by Zdunek et al., in the method of Kim et al., in order to balance call load efficiently.

10. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kotzin et al. (U.S. Patent # 5,796,722)** in view of **Ayyagari et al. (U.S. Patent # 6,278,701)**.

Consider **claim 6**, and **as applied to claim 4 above**, Kotzin et al. clearly show and disclose the claimed invention except that the call quality, reading on the claimed "quality of service level," of the communication system is improved by adjusting base transceiver station transmit power.

In the same field of endeavor, Ayyagari et al. clearly show and disclose a method of enhancing the capacity of a CDMA cellular carrier supporting voice and multi-code data user which comprises the steps of setting a quality of service requirement for the data users based on the traffic load and the quality of service requirement for the voice users, and decreasing the received power level of the data users until their quality of service requirement is satisfied, reading on the claimed "base transceiver station transmit power is adjusted to maintain said prescribed quality of service level" (figure 1 and column 3 lines 16-21 and 24-25). It is inherent in a CDMA cellular system or a wireless communications network that power in such a system is transmitted from a base station or base station transceiver.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to decrease the received power level, reading on the claimed "base transceiver station transmit power," to satisfy the quality of service requirement as taught by Ayyagari et al., in the method of

Kotzin et al., in order to improve the capacity and call quality of the communication system, reading the claimed "quality of service level."

11. **Claims 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kotzin et al. (U.S. Patent # 5,796,722)** in view of **Salonaho et al. (U.S. Patent # 6,594,495 B2)**.

Consider **claim 7**, and **as applied to claim 4 above**, Kotzin et al. clearly show and disclose the claimed invention except that intra-cell interference is maintained in order to improve the capacity and call quality of the communication system, reading the claimed "quality of service level."

In the same field of endeavor, Salonaho et al. clearly show and disclose a method and radio system in which a load can be optimally controlled at a connection and/or cell level. The signals **23** represent interference within a cell **1**, reading on the claimed "intra-cell interference," as these desired signals interfere with one another. Referring to equation (4) if the load **L** substantially exceeds that is allowed according to the predetermined threshold value **K_t**, the effect of the interference on the desired signals of the cell is reduced preferably by decreasing the data transmission rate of the desired signals, reading on the claimed "intra-cell interference is maintained below a prescribed level" (figure 2, column 2 lines 23-25, column 5 lines 51-53 and column 6 lines 9-14).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to reduce the effect of the interference

within a cell, reading on the claimed "intra-cell interference," as taught by Salonaho et al., in the method of Kotzin et al., in order to improve the capacity and call quality of the communication system, reading the claimed "quality of service level."

Consider **claim 8**, and **as applied to claim 4 above**, Kotzin et al. clearly show and disclose the claimed invention except that inter-cell interference is maintained in order to improve the capacity and call quality of the communication system, reading the claimed "quality of service level."

In the same field of endeavor, Salonaho et al. clearly show and disclose a method and radio system in which a load can be optimally controlled at a connection and/or cell level. Signals of other cells arrive at the cell 1 from outside, the signals being interferences 13 in the cell, reading on the claimed "inter-cell interference". Referring to equation (4) if the load L substantially exceeds that is allowed according to the predetermined threshold value K_t , the effect of the interference on the desired signals of the cell is reduced preferably by decreasing the data transmission rate of the desired signals, reading on the claimed "intra-cell interference is maintained below a prescribed level" (figure 2, column 2 lines 23-25, column 5 lines 53-55 and column 6 lines 9-14).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to reduce the effect of the interference from outside a cell, reading on the claimed "inter-cell interference," as taught by Salonaho et al., in the method of Kotzin et al., in order to improve the capacity

and call quality of the communication system, reading the claimed "quality of service level."

12. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kotzin et al. (U.S. Patent # 5,796,722)** in view of **Brody et al. (U.S. Patent # 4,670,899)**.

Consider **claim 11**, Kotzin et al. clearly show and disclose the claimed invention **as applied to claim 10 above**, and in addition, Kotzin et al. clearly disclose a controller unit, reading on the claimed "control means," that receives input from at least the monitoring means and the location determination device to determine whether a handoff of any of the plurality of subscribers would improve overall system performance. If the controller, based upon the input received, determines that system performance would improve if a subscriber is reallocated, the controller instructs the communication system to select a preferential candidate subscriber and performs a handoff of the subscriber from a first carrier to a second carrier, thereby mitigating the performance degradation associated with a load imbalance, reading on the claimed "control means operable to effect call handoff upon attainment of call loading for said at least one of voice or data traffic at a percentage of said predetermined maximum level" (column 3 lines 43-54).

However, Kotzin et al. do not specifically disclose that the handoff is between base station sectors or cell sites.

In the same field of endeavor, Brody et al. clearly show and disclose balancing of loading of cells in a cellular mobile radio telephone system is performed by periodically determining the channel utilization of each cell, computing a representative voice channel occupancy level, reading on the claimed "call load," and attempting to hand-off calls, reading on the claimed "at least one of voice or data traffic," from cells with higher voice channels occupancy levels to adjacent cells with lower voice channel occupancy levels. If a channel occupancy level, reading on the claimed "call load," for a first geographical area, reading on the claimed "base station sector or cell site," exceeds a predetermined threshold level, at least one call is transferred from a stationary transceiver serving the first geographical area to a stationary radio transceiver serving another predetermined geographical area overlapping the first area and also containing the mobile transceiver, reading on the claimed "control means operable to effect call handoff from a first base transceiver station sector or cell site to a second base transceiver sector or cell site upon attainment of call loading for said at least one of voice or data traffic at a percentage of said predetermined maximum level" (abstract and column 7 lines 12-24).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to handoff calls between geographical areas, reading on the claimed "base transceiver station sector or cell site," as taught by Brody et al., in the method of Kotzin et al., in order to balance call traffic, reading on the claimed "at least one of voice or data traffic."

Allowable Subject Matter

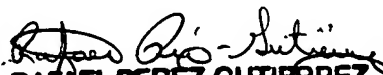
13. **Claims 12-14** are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime M. Holliday whose telephone number is (571) 272-8618. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RAFAEL PEREZ-GUTIERREZ
PATENT EXAMINER
8/8/05